

63. The only hypothesis regarding the firm price-setting relationships supported by the static market evidence of price-cost margins and HHIs is that of tacit collusion. According to the theory of tacit collusion, the levels of HHI and price-cost margins in one market have no direct association with the levels in another market. A relatively high HHI market concentration could be associated with relatively low price-cost margins, with the converse holding as well. The IMTS and IWATS margins are also similar in magnitude to the simple monopoly price-cost margins shown in Table Three, but exceed the non-cooperative, Cournot price-cost margins shown in Table Four. Although the price-cost margins in Tables Three and Four are illustrative in nature, they do provide order-of-magnitude estimates of expected margins resulting from tacit collusion and Cournot behavior.

64. The IMTS and IWATS margins in the eight country-pair markets also generally exceed those found in United States domestic markets for long-distance MTS and WATS services.<sup>34</sup> Domestic MTS margins for AT&T, MCI, and Sprint were approximately 0.7 in 1994, but most of the IMTS margins exceeded 0.7 by 1994.<sup>35</sup> The IMTS and IWATS margins also exceed levels found in highly concentrated manufacturing industries in the United States. In a sample of 284 U.S. industries examined for 1981, the average price-cost margin was 0.275, or less than half the value found for most of the standard IMTS markets.<sup>36</sup> In addition, for the group of industries in this sample of 284 having the highest market concentration (the top four firms accounting for at least 81 percent of sales), the average price-cost margin was 0.33 or still less than half the value for most of the international markets.

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<sup>34</sup> See MacAvoy, P. (1995), *Tacit Collusion Under Regulation in the Pricing of Interstate Long-Distance Telephone Services*, 4 JOURNAL OF ECONOMICS AND MANAGEMENT STRATEGY 147.

<sup>35</sup> The exceptions to this finding are Mexico, Italy (for AT&T and MCI), and the Dominican Republic.

<sup>36</sup> Domowitz, I., Hubbard, R., and Petersen, B. (1986), *Business Cycles and the Relationship Between Concentration and Price-Cost Margins*, 17 RAND JOURNAL OF ECONOMICS 1-17.

65. In sum, evidence on the static behavior of HHIs and price-cost margins rejects the Cournot and Bertrand hypotheses, but supports the predictions of the tacit collusion hypothesis. Thus, the tacit collusion hypothesis best explains the observed price-cost margins and HHIs across country-pairs at a point in time.

## **V. FINAL COMMENT ON PRIMARY CONCLUSIONS**

66. The benefits to United States consumers from encouraging facilities-based entry by foreign carriers depends on the competitiveness of United States international telecommunications markets. By examining trends in United States carriers' price-cost margins and market concentration, I conclude that carriers set prices as if in tacit collusion. The evidence allows no other conclusion because other hypotheses of firm price-setting behavior would result in entirely different dynamic and static patterns of price-cost margins. Since the markets are not competitive, facilities-based entry by foreign carriers should be encouraged in an attempt to increase the competitiveness of United States international telecommunications markets.

67. As explained in section I, entry by new firms into markets in which price exceeds the competitive level generally has the effect of lowering price as firms compete for customers. This is particularly true if incumbent firms set prices in a tacitly collusive manner. Consumers would benefit as prices are driven down from monopoly levels set by tacitly colluding firms. This would increase consumer surplus, as the difference between what individuals were willing to pay for a service and what they actually pay would increase. Finally, deadweight welfare losses resulting from monopolistic prices that prevented some customers from purchasing services would decrease as a consequence of competitive entry by new firms.

68. The Commission should consider the deleterious effects the proposed rule would have on United States consumers. International telecommunications markets are not competitive. United States consumers pay rates significantly above the competitive level as a result of tacitly collusive behavior on the part of incumbent, facilities-based carriers. An alternative policy that would allow facilities-based entry by foreign-affiliated carriers regardless of the presence of reciprocal entry conditions in foreign carriers' markets has the potential to increase price competition which would benefit United States consumers.

Dated: May 11, 1995



APPENDIX ONE

CURRICULUM VITAE OF PAUL W. MACAVOY

# **YALE School of Management**

New Haven, Connecticut

Paul W. MacAvoy  
Williams Brothers  
Professor of Management Studies

## **CURRICULUM VITAE: PAUL WEBSTER MACAVOY**

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203-498-7480 (fax)      802-457-3224 (Vermont Office)

**Education** Yale University: M.A., 1956; Ph.D., 1960  
**and Degrees:** Bates College: A.B., 1955

**Employment:** Williams Brothers Professor of Management Studies  
Yale School of Management, 1991 -

Dean, Yale School of Management, 1992-1994

McLaughlin Visiting Professor of Business Administration  
The Amos Tuck School of Business Administration  
Dartmouth College, 1991

Lester Crown Visiting Professor of Management,  
Yale School of Organization and Management, 1990 - 1991

Dean and John M. Olin Professor of Public Policy  
William E. Simon Graduate School of Business Administration  
University of Rochester, 1983 - 1991

Frederick William Beinecke Professor of Economics,  
Yale University, 1981 - 1983

Milton Steinbach Professor of Organization and Management  
Yale School of Organization and Management, 1977 - 1981

Member, President's Council of Economic Advisers,  
The Ford Administration, 1975 - 1976

Henry R. Luce Professor of Public Policy  
Sloan School of Management  
Massachusetts Institute of Technology, 1974 - 1975

Professor and Associate Professor of Management  
Massachusetts Institute of Technology, 1966 - 1974

October, 1994

Assistant Professor of Economics  
Massachusetts Institute of Technology, 1963 - 1965

Assistant Professor of Business Economics  
Graduate School of Business  
University of Chicago, 1960 - 1963

**Corporate Appointments  
and Memberships:**

Board of Directors, Open Environment Corporation, 1993 -

Board of Directors, Chairman of the Executive and Audit Committees, Alumax Corporation, 1993 - ; Successor corporation to AMAX Corporation, 1978 - 1993

Board of Directors and Chairman of the Nominating and Governance Committee, American Cyanamid Company, 1977 - 1980; 1986 -

Board of Directors and Member of the Executive and Trusts Committees, the Chase Manhattan Bank Corporation, 1992 -

Board of Directors and Member of the Strategy and Pension Committees, Lafarge Corporation, 1993 -

Former Board of Directors, Gleason Corporation, 1987 - 1993

Former Board of Directors, AMAX Gold, Incorporated, 1992 - 1993

Former Board of Directors, Combustion Engineering, Incorporated, 1980 - 1989

Former Board of Directors, Colt Industries, Incorporated, 1984 - 1988

Former Board of Directors, United States Synthetic Fuels Corporation, 1985 - 1986

Former Board of Directors, Air One, Incorporated, 1983 - 1984

Former Board of Directors, The Columbia Gas System, 1977 - 1978

**University and Non-Profit  
Appointments and Memberships:**

National Academy of Sciences Panel on the Government's Role in Civilian Technology, 1991 - 1992

Elected Fellow, The American Academy of Arts and Sciences, 1981 -

Adjunct Scholar, American Enterprise Institute for Public Policy Research, 1977 - 1985. Chairman of Academic Advisory Board, the Telecommunications Deregulation Project, 1992 -

President's National Productivity Advisory Committee, 1982 - 1984

Member of the Council, The Administrative Conference of the United States, 1980 - 1981

American Bar Association Commission on Law and the Economy, 1977 - 1981

Elected Alumni Member, Board of Trustees, Bates College, 1977 - 1982

Massachusetts Public Power Study Commission, 1974 - 1975

Founding Member, Energy Policy Studies Group, MIT Energy Laboratory,  
1974 - 1975

Brookings Institution Adjunct Fellow, Program in the Regulation of Economic Activity, 1970 - 1971

Founding Member of the Council of Economic Advisers, State Government of New York, 1969 - 1972

Founding Editor, *The Bell Journal of Economics and Management Science*,  
1970 - 1975

Member of Presidential Task Force on Revision of the Antitrust Laws (the "Neal Task Force"), 1967 - 1968

Staff Economist, Council of Economic Advisers, the Johnson Administration,  
Executive Office of the President, 1965 - 1966

Law and Economics Fellow, Ford Foundation Faculty Research Fellow,  
University of Chicago Law School, 1962 - 1963

#### Publications-

##### Books:

P.W. MacAvoy, *Industry Regulation and the Performance of the American Economy* (W.W. Norton, 1992)

P.W. MacAvoy, *Explaining Metals Prices*, (Kluwer Academic Publishers, 1988)

P.W. MacAvoy, W. T. Stanbury, George Yarrow, and Richard J. Zeckhauser, *Privatization and State-Owned Enterprises: Lessons from the United States, Great Britain and Canada*, (Kluwer Academic Publishers, 1988)

P.W. MacAvoy, *Energy Policy: An Economic Analysis* (W.W. Norton, 1983)

P.W. MacAvoy, *Crude Oil Prices: As Determined by OPEC and Market Fundamentals* (Ballinger Press, 1982)

P.W. MacAvoy and Andrew S. Carron, *The Decline of Service in the Regulated Industries* (American Enterprise Institute, 1981)

P.W. MacAvoy, *The Regulated Industries and the Economy*, (W.W. Norton, 1979)

P.W. MacAvoy, *Economic Perspective on the Politics of International Commodity Agreements* (The Gustavson Memorial Lecture, University of Arizona Press, 1977)

P.W. MacAvoy and R.S. Pindyck, *Price Controls and the Natural Gas Shortage* (National Energy Project, American Enterprise Institute, 1975)

P.W. MacAvoy and R.S. Pindyck, *The Economics of the Natural Gas Shortage (1960 - 1980)* (North Holland Publishing Company, 1975)

Stephen Breyer and P.W. MacAvoy, *Energy Regulation by the Federal Power Commission* (Brookings Institution, 1974)

P.W. MacAvoy and Dean F. Peterson, *Large Scale Desalting: A Study in the Engineering Economics of Regional Development* (Praeger, 1969)

P.W. MacAvoy, *Economic Strategy for Developing Nuclear Breeder Reactors* (MIT Press, 1969)

P.W. MacAvoy and James Sloss, *Regulation of Transport Innovation: The Case of Unity Trains of Coal to the Eastern Seaboard* (Random House, 1967)

P.W. MacAvoy, *The Economic Effects of Regulation: The Trunkline Railroad Cartels and the Interstate Commerce Commission 1870 - 1900* (MIT Press, 1965)

P.W. MacAvoy, *Price Formation in Natural Gas Fields: A Study of Competition Monopsony and Regulation* (Yale University Press, 1962)

#### Publications-

#### Journal

#### Articles:

P.W. MacAvoy, "Prices After Deregulation: The United States Experience" *The Hume Papers on Public Policy*, Vol. 1, No. 3 (Autumn, 1993)

Michael F. Koehn, Paul W. MacAvoy, and Harindra de Silva, "Market Responses to Asbestos in Buildings" *Journal of Real Estate Finance and Economics*, (Issue 3, 1990)

Paul W. MacAvoy, Daniel F. Spulber, and Bruce Stangle, "Is Competitive Entry Free? Bypass and Partial Deregulation in Natural Gas Markets" *Yale Journal on Regulation*, Vol. 6, No. 2 (Summer 1989)

Ronald W. Hansen, Paul W. MacAvoy, and Clifford Smith, Jr., "Compensation Alternatives for Occupational Disease and Disability" *Journal of Risk and Insurance*, Vol. 56, Issue 2 (June 1989)

Gary P. Yohe and P.W. MacAvoy, "A Tax Cum Subsidy Regulatory Alternative for Controlling Pollution", *Economics Letters*, Vol. 25, No. 2 (1987)

P.W. MacAvoy, "The Record of the Environmental Protection Agency in Controlling Industrial Air Pollution", *Energy, Markets and Regulation: What Have We Learned?*, Editors: Richard L. Gordon, Henry D. Jacoby, and Martin B. Zimmerman (The MIT Press, 1986)

P.W. MacAvoy and Kenneth Robinson, "Losing by Judicial Policymaking: The First Year of the AT&T Divestiture", *Yale Journal on Regulation*, Vol. 2, No. 2 (April, 1985)

P.W. MacAvoy and Kenneth Robinson, "Winning by Losing: The AT&T Settlement and Its Impact on Telecommunication", *Yale Journal on Regulation*, Vol. 1, No. 1 (November, 1983)

P.W. MacAvoy, "The Natural Gas Policy Act of 1978," *Natural Resources Journal*, Vol 19, No. 4 (October, 1979)

P.W. MacAvoy and Richard N. Funkhouser, "A Sample of Observations on Pricing in Public and Private Enterprises," *Journal of Public Economics*, Vol. 11, No. 3 (June, 1979)

P.W. MacAvoy and Richard A. Charpie, "Conserving Energy in the Production of Aluminum", *Resources and Energy*, Vol. 1, No. 1 (1978)

Stephen Breyer and P.W. MacAvoy, "The Natural Gas Shortage and the Regulation of Natural Gas Producers," *Harvard Law Review* (April, 1973), reprinted in revised form in R.S. Kalter and W. Vogeley, editors, *Energy Supply and Government Policy*, Vol. 86, No. 6 (Cornell University Press, 1976)

P.W. MacAvoy and P.L. Joskow, "Regulation and the Financial Condition of the Electric Power Companies in the 1970's," *American Economic Review*, Vol. 65, No. 2 (May, 1975)

P.W. MacAvoy, "Policy Conflicts in the Separate Control of Quantity and Price in the Energy Industries," *The Journal of Monetary Economics* (supplement to Vol. 3, 1975)

P.W. MacAvoy and Roger Noll, "Relative Prices on Regulated Transactions of the Natural Gas Pipelines," *The Bell Journal of Economics and Management Science*, Vol. 4, No 1 (Spring, 1973)

Stephen Breyer and P.W. MacAvoy, "The Federal Power Commission and the Coordination Problem in the Electric Power Industry," *Southern California Law Review*, Vol. 46, No. 3 (June, 1973)

P.W. MacAvoy, "The Formal Work-Product of the Federal Power Commission," *The Bell Journal of Economics and Management Science*, Vol. 2, No. 1 (Spring, 1971)

P.W. MacAvoy, "The Regulation-Induced Shortage of Natural Gas," *The Journal of Law and Economics*, Vol. 14, No. 1 (Spring, 1971)

P.W. MacAvoy, "The Effectiveness of the Federal Power Commission," *The Bell Journal of Economics and Management Science*, Vol. 1, No. 2 (Autumn, 1970)

Daniel Orr and P.W. MacAvoy, "Price Strategies to Promote Cartel Stability," *Economica*, Vol. 32, No. 126 (May, 1965)

#### Ford Administration Papers On Regulatory Reform:

P.W. MacAvoy and John W. Snow (eds.), *Railroad Revitalization and Regulatory Reform* (American Enterprise Institute, 1977)

P.W. MacAvoy, John W. Snow (eds.), *The Regulation of Passenger Fares and Competition Among the Airlines* (American Enterprise Institute, 1977)

P.W. MacAvoy, John W. Snow (eds.), *Regulation of Entry and Pricing in Truck Transportation* (American Enterprise Institute, 1977)

P.W. MacAvoy (ed.), *Federal-State Regulation of the Pricing and Marketing of Insurance* (American Enterprise Institute, 1977)

P.W. MacAvoy (ed.), *Federal Milk Marketing Orders and Price Supports* (American Enterprise Institute, 1977)

P.W. MacAvoy (ed.), *Deregulation of Cable Television* (American Enterprise Institute, 1977)

P.W. MacAvoy (ed.), *OSHA Safety Regulation: Report of the Presidential Task Force* (American Enterprise Institute, 1977)

P.W. MacAvoy (ed.), *Federal Energy Administration Regulation: Report of the Presidential Task Force* (American Enterprise Institute, 1977)

### Projects

#### Outstanding:

P.W. MacAvoy, M.J. Doane and M.E. Williams, "Federal Energy Regulatory Commission Order 636: Divestiture of Gas Ownership By The Pipelines As The Penultimate Regulatory Reform In The Natural Gas Industry" (Yale School of Management Working Paper #38, September, 1994)

P.W. MacAvoy, "Tacit Collusion by Regulation: Pricing of Interstate Long-Distance Telephone Service" (Yale School of Management Working Paper #37, August, 1994)

P.W. MacAvoy, "Financing of Liability Payments for Asbestos-Related Disease" (Yale School of Organization and Management Working Paper #35, January, 1992)

Jack W. Bauer and P.W. MacAvoy, "The Transition from Natural to Synthetic Gas" (University of Rochester William E. Simon Graduate School of Business Administration Working Paper GPB 867-08, 1986)

### Major

#### Consultancies:

Expert Report, deposition and trial testimony on behalf of U.S. Department of Justice: *Economic analysis of the representative market or field price for natural gas produced in the East Texas and Gulf Coast during tax year 1984 conducted for the purpose of establishing depletion allowances.* Exxon Corporation and Subsidiaries vs United States, United States Claims Court, August, 1994.

Affidavit submitted on behalf of four Regional Bell Operating Companies: *Economic analysis of competition in long distance telecommunications.* U.S. vs Western Electric, Inc. and AT&T, Civil Action No. 82-0192 (HHG).

Prepared Direct Testimony before the Federal Energy Regulatory Commission on behalf of Texas Eastern Transmission Corporation: *Analysis of market conditions in the natural gas industry for the purpose of evaluating gas purchase prudence issues.* Docket No. RP93-125-000, August, 1993.

Prepared Direct Testimony before the Federal Energy Regulatory Commission on Behalf of Texas Eastern Transmission Corporation: *Analysis of the supply and demand conditions within which Texas Eastern purchased gas over the period 1978-1993.* Docket No. RP85-177-102, et al, July, 1993.

**Report: *Analysis of the Effects of Mojave's Pipeline Extension on Gas Transportation Costs and Rates in the State of California***, for Pacific Gas and Electric Company, FERC Docket No. CP93-258-000, April 1993.

**Member of the Federal Energy Regulatory Commission Task Force: *On Developing A Framework For Assessing Competition In Natural Gas Transportation*** (The Commissioner Terzic Task Force) 1992-1993 as representative for the Interstate Natural Gas Association of America.

***Economic Analysis of Refiners' Passthrough of the Citronelle (Oil Field Price Control) Exception Relief*** (with Joseph P. Kalt). **Statement to the Special Refund Procedures: The 341 Tract Unit of the Citronelle Field, LFX-0008**, Office of Hearings and Appeals, US Department of Energy (July, 1992)

**Prepared Direct and Rebuttal Testimony, Matter of Arbitration involving ProGas Limited and Texas Eastern Transmission Corporation: *Economic analysis regarding the redetermination of pricing provisions in a gas purchase contract***, 1992.

**Prepared Direct Testimony before the Federal Energy Regulatory Commission on behalf of Texas Eastern Transmission Corporation: *Analysis of economic issues related to pipeline market power in Texas Eastern's service markets in the northeast***. FERC Docket No. RS92-11-000 (June, 1992)

**Research and Deposition Testimony: *Assessment of Alternative Techniques for Valuing Natural Gas for Severance Tax Purposes***, for Marathon Oil Company, before the State of Alaska, Department of Revenue, Docket No. 89314, 1990

**Testimony and Report, *Competition and Public Policy: Economic Analysis of Unitel Communication, Inc.'s Application to Provide Public Long-Distance Telephone Service in Canada***, for British Columbia Telephone Company, before the Canadian Radio - Telecommunications Commission, 1990 - 1991

**Prepared direct and rebuttal testimony: *Economic Analysis of Market Power in the Natural Gas Pipeline Industry*** for Texas Eastern Transmission Company in *Equitrans, Inc. v. Texas Eastern Transmission Corporation*. Federal Energy Regulatory Commission Docket No. CP90-2154-000, 1991 - 1992

**Comments on FERC Notice *Regarding Pipeline Service Obligations***. Submitted to the Federal Energy Regulatory Commission on behalf of the Panhandle Eastern Corporation Pipeline Group, April 1991

**Statement: *Antitrust Issues in the Atlantic City Casino Industry***, BPHC Acquisition Inc., et al. and BPHC Parking Corp. v. Boardwalk Properties, Inc., Penthouse International, Ltd., and Donald J. Trump, et al., 1990 - 1992

***Economic Analysis and Witness Testimony on Antitrust Issues Involving Dominant Firm Conduct in the Movie Distribution Industry***. U.S. vs Syufy Enterprises, before the U.S. District Court in San Francisco, 1988

**Airline Pilots Association vs Trans World Airlines. *An Assessment of the Financial Status of Trans World Airlines***, before the Supreme Court of the State of New York, December, 1988

Memorandum for the Templeton Foundation *On Establishing a World Class Business School at Oxford University* by Paul W. MacAvoy, Merton Peck and Richard West (1989)

Testimony and Report on *the Effects of Bypass of the Gas Distribution Pipelines in the California Natural Gas Retail Market*, for Southern California Gas Company, before the Federal Energy Regulatory Commission, 1987 - 1988

Research and Testimony on *the Economic Effects of Airlines' Computer Reservation Systems*, for US Air et al. vs American and United Airlines, 1986 - 1988

Research on the *Competitive Effects of Automobile Company Joint Ventures*, for Chrysler Corporation, to be presented to the U.S. District Court, District of Columbia, in Chrysler Corp. vs General Motors - Toyota, 1985 - 1986

Research on the *Economic Effects of the Sale of Conrail to the Norfolk Southern Railway*, for the Norfolk Southern Railway, 1985 - 1986

*Economic testimony regarding the Impact of Imports of Aramid Fibers on U.S. Domestic Kevlar Sales*, for Akzo Chemicals Corporation, before the U.S. International Trade Commission in Investigation No. 337-TA-194, 1985 - 1986

Testimony on the *Competitive Effects of the SFSP merger*, for Santa Fe-Southern Pacific Corporation, before the Interstate Commerce Commission, in ICC Docket 30400, 1985

Testimony in Department of Transportation hearings regarding *Transfer of Pan American Airways Pacific Routes to United Airlines*, for Eastern Airlines, 1985

Testimony before the U.S. Postal Rate Commission regarding *Cost Allocation Techniques in Setting Postal Rates* for the Magazine Publishers Association, 1984 - 1985

Testimony regarding the *Rate Structure and Long Distance Competition in New England Telephone Service*, before the State of Maine Public Utilities Commission, Docket No. 83-213, 83-179, 1984

*Economic Analysis of Pricing Strategies in Regulated Long Distance Telephone Service Markets*, for American Telephone and Telegraph Company in U.S. vs. AT&T Co., 552 F. Supp. 131 (D.D.C. 1982) 1978 - 1982

Consultant to the Regulatory Reform Task Force of the Economic Council of Canada, 1979 - 1981

Consultant to the Federal Energy Office on econometric modeling of energy markets, 1973 - 1975

Testimony on the El Paso-Pacific Northwest gas pipeline merger, for the U.S. Senate Commerce Committee, Seattle, Washington, 1971

Project administrator for the Ministry of Finance of the Republic of Indonesia, on *the Efficiency of Nationalized Industry* (on contract from the Harvard University Development Advisory Service), 1971 - 1974

Consultant to the Economic Planning Board of Puerto Rico, on *Large-scale Energy Complexes*, 1970 - 1971

Consultant to the State Department, on *Large-scale Desalting in Israel*, 1966 - 1967

Consultant to the Ford Foundation, on *the proposal for a Domestic Non-profit Television Satellite System*, 1966



## APPENDIX TWO

### MARKET SHARES IN SELECTED COUNTRY PAIRS

TABLE ONE  
MARKET SHARES OF FACILITIES-BASED CARRIERS  
OFFERING TELECOMMUNICATIONS SERVICES FROM THE UNITED STATES TO CANADA

Year	AT&T	MCI	Sprint	Other
1991	67.8	19.9	11.8	0.4
1992	60.3	22.7	16.5	0.5
1993	57.2	24.6	15.1	3.1

TABLE TWO  
MARKET SHARES OF FACILITIES-BASED CARRIERS  
OFFERING TELECOMMUNICATIONS SERVICES FROM THE UNITED STATES TO MEXICO

Year	AT&T	MCI	Sprint	Other
1991	78.5	12.7	8.7	0.1
1992	74.2	17.0	8.6	0.1
1993	68.6	22.0	9.0	0.3

TABLE THREE  
 MARKET SHARES OF FACILITIES-BASED CARRIERS  
 OFFERING TELECOMMUNICATIONS SERVICES FROM THE UNITED STATES TO THE UNITED KINGDOM

Year	AT&T	MCI	Sprint	Other
1985	95.1	3.6	1.4	-
1986	87.5	9.1	3.4	-
1987	84.5	9.9	5.1	0.5
1988	81.3	11.8	5.8	1.0
1989	76.5	14.8	7.2	1.5
1990	73.2	17.0	9.0	0.8
1991	70.3	19.8	9.1	0.7
1992	68.7	20.8	9.5	1.0
1993	66.1	21.6	10.9	1.4

TABLE FOUR  
 MARKET SHARES OF FACILITIES-BASED CARRIERS  
 OFFERING TELECOMMUNICATIONS SERVICES FROM THE UNITED STATES TO GERMANY

Year	AT&T	MCI	Sprint	Other
1985	100.0	0.0	0.0	-
1986	100.0	0.0	0.0	-
1987	100.0	0.0	0.0	0.0
1988	92.3	5.0	2.6	0.3
1989	84.6	9.8	5.6	0.0
1990	81.3	12.5	6.2	0.0
1991	80.8	13.2	5.9	0.0
1992	76.6	16.5	6.6	0.3
1993	72.2	19.1	8.5	0.2

TABLE FIVE  
 MARKET SHARES OF FACILITIES-BASED CARRIERS  
 OFFERING TELECOMMUNICATIONS SERVICES FROM THE UNITED STATES TO JAPAN

Year	AT&T	MCI	Sprint	Other
1985	100.0	0.0	0.0	-
1986	97.7	1.5	0.8	-
1987	88.8	6.2	5.0	0.0
1988	83.6	9.7	6.7	0.0
1989	78.5	12.4	9.1	0.0
1990	73.0	17.4	9.6	0.1
1991	71.5	19.9	8.4	0.3
1992	67.5	23.2	8.6	0.8
1993	59.9	25.9	11.2	3.4

TABLE SIX  
 MARKET SHARES OF FACILITIES-BASED CARRIERS  
 OFFERING TELECOMMUNICATIONS SERVICES FROM THE UNITED STATES TO FRANCE

Year	AT&T	MCI	Sprint	Other
1985	100.0	0.0	0.0	-
1986	93.9	6.1	0.0	-
1987	82.1	10.8	0.9	6.2
1988	79.9	13.7	5.2	0.0
1989	76.2	14.7	6.6	2.4
1990	72.0	17.6	7.8	2.6
1991	70.6	19.0	8.6	1.8
1992	68.4	21.1	8.8	1.7
1993	65.3	22.5	10.0	2.1

TABLE SEVEN  
 MARKET SHARES OF FACILITIES-BASED CARRIERS  
 OFFERING TELECOMMUNICATIONS SERVICES FROM THE UNITED STATES TO THE DOMINICAN  
 REPUBLIC

Year	AT&T	MCI	Sprint	Other
1985	100.0	0.0	0.0	-
1986	97.3	0.0	2.7	-
1987	96.5	0.0	3.5	0.0
1988	98.6	0.0	1.4	0.0
1989	89.9	7.6	2.5	0.0
1990	84.3	11.4	4.2	0.0
1991	82.9	11.4	5.7	0.0
1992	80.3	13.1	4.6	2.0
1993	69.0	18.5	6.9	5.6

TABLE EIGHT  
 MARKET SHARES OF FACILITIES-BASED CARRIERS  
 OFFERING TELECOMMUNICATIONS SERVICES FROM THE UNITED STATES TO ITALY

Year	AT&T	MCI	Sprint	Other
1985	100.0	0.0	0.0	-
1986	98.3	1.7	0.0	-
1987	91.0	6.2	2.8	0.0
1988	86.8	9.3	3.8	0.0
1989	83.2	11.5	5.3	0.0
1990	79.2	14.6	6.3	0.0
1991	78.1	16.2	5.7	0.0
1992	74.5	19.3	6.2	0.0
1993	70.9	21.9	7.0	0.2

TABLE NINE  
CARRIERS OFFERING FACILITIES-BASED SERVICE  
FROM THE UNITED STATES TO SELECTED COUNTRIES

Long Distance Carrier	Canada	Mexico	UK	Germany	Japan	France	Dom. Rep.	Italy
Alascom	x	x	x	x	x	x	x	x
AT&T	x	x	x	x	x	x	x	x
Cable and Wireless Comm.	x							
Fonorola Corp.	x							
GTE	x	x	x	x	x	x	x	x
IT&E Overseas	x	x	x	x	x	x	x	x
MCI	x	x	x	x	x	x	x	x
Sprint	x	x	x	x	x	x	x	x
St. Thomas & San Juan Telephone							x	
TLD	x	x					x	
TRT/FTC Communications	x	x	x	x	x	x		
World Communications			x		x		x	

Source: Federal Communications Commission, 1992 Section 43.61 International Telecommunications Data, December 1993.



APPENDIX THREE

STANDARD IMTS PRICES

DISCOUNT IMTS PRICES

IWATS PRICES